

**Memorandum of Understanding
on the creation of
European Radioecology Alliance (ERA)**

PRELIMINARY REMARKS

In the present document, radioecology is defined as the scientific discipline that gathers all the environmentally related knowledge required to assess the impacts of radioactive substances on the environment. Radioecology includes the study of transfer pathways through which radionuclides traverse, and thereby expose or contaminate the environment, and consequently human populations. Radioecology also examines the effects of radionuclides on ecosystems (*i.e.* ecotoxicology of radionuclides). Such studies are important to optimize radiation protection. They are also important to society because any over- or under-estimation of contaminant exposure or radiological effects could lead to unnecessary and costly restrictions, or alternatively, to a lower level of protection for the public or the environment.

Although current radiation protection standards for the public are generally judged to be acceptably robust, there remain considerable scientific uncertainties with regard to dose and health risk assessments. Some of these uncertainties originate from the exposure assessment, which is largely dependent on knowledge of the behaviour of natural and artificial radionuclides in the environment. The acquisition of new scientific knowledge through research in radioecology is therefore a crucial element in improving the public's protection.

The need for a system to protect the environment from ionising radiation has, over the past decade, been recognised internationally. The ICRP has recently addressed environmental protection as an element of its revision of recommendations. Environmental protection is also referred to in the draft revision of the International and European Basic Safety Standards (BSS). Moreover, successive EU projects (FASSET, ERICA, PROTECT) have developed approaches for ecological risk assessments for radionuclides, based on methodologies used for chemical assessments. At this stage, a limitation in the use of these methods is that major knowledge gaps remain in the quantification of radionuclide effects on different taxonomic groups of plants and animals. It is, therefore, important to develop radioecological effects research at the various levels of biological and ecological complexity in order to have sufficient data and understanding to reduce the current uncertainties in risk assessments. The uncertainties are particularly large for effects from chronic, low level exposures and their potential ecological consequences (*i.e.* on the structure and functioning of ecosystems). Moreover, as a portion of such research should focus on the study of effects caused by exposure to low doses and low dose rates, radioecological research could be linked with the work performed within the context of the MELODI platform.

During the last decades, European research in radioecology has excelled such that Europe's foremost expertise is widely recognized. However, there are now clear signs that key elements of this expertise are declining and fragmenting, to a level that it would be difficult in the future to maintain adequate knowledge covering the needs of regulators, society and industry in Europe. Most of the National and EU funded radioecology programmes of the last decade have focused on modeling efforts and data summaries. There has been little acquisition of new basic knowledge, especially through hypothesis-driven, experimental research. The declining competence and expertise in radioecology could have important consequences. Knowledge based radioecological expertise is needed for new nuclear builds (new generation reactors, fusion, ...), for the regulators (concerning *e.g.* emergency planning, NORM, nuclear waste, ...) and in the case of a nuclear accident or terrorist attack.

Radioecology's success in Europe has been based on several large-scale experiences in scientific networking, established at a regional scale or on a thematic basis. For example, NKS (Nordic Nuclear Safety Research) has been an efficient tool for Nordic authorities to acquire a basis for uniform working patterns in quality assurance, environmental measurements, radiological assessments and emergency procedures. More recently, following the ERICA European project, a memorandum of understanding was signed between five European organisations to maintain and carry out further developments on the ERICA tool. Such efforts demonstrate the willingness to develop a sustainable cooperation between organisations. These successful experiences, although not concerned with research programmes, demonstrate that networking, when established, can greatly optimize the use of valuable resources and expertise.

THE PARTIES, CONSIDERING :

- the above preliminary remarks,
 - their respective mission or interest to provide and maintain state of the art research and expertise in radioecology,
 - their important involvement in past and current European Research and Development (R&D) projects under the auspices of the EURATOM research programmes, and
 - the conclusions and propositions of the FUTURAE Coordinated Action within the 6th EURATOM framework,
- Jointly state their intention to bring together, in a step-by-step approach and with an aspiration of sustainability, part of their respective R&D programmes into an integrated trans-national programme that : 1) maintains and enhances radioecological competences and experimental infrastructures in Europe, with an international perspective, and 2) addresses scientific and educational challenges related to the assessment of the impact of radioactive substances on humans and the environment.
 - Decide to set up European Radioecology Alliance (ERA) for the purpose of :
 - Taking advantage of the review, performed during the FUTURAE project, on current European R&D programmes and related activities (e.g., funding processes, training and education, knowledge management, maintenance and optimization of key experimental facilities), with a view to elaborate proposals towards the progressive integration within the scope of a future joint Strategic Research Agenda (SRA).
 - Working together for a sustainable trans-national organisation capable of elaborating and managing such a SRA and ensuring appropriate interface with the wider research community, including universities and key stakeholders.
 - Preparing a common response to the upcoming EURATOM framework call for the creation of a Network of Excellence (NoE) dedicated to radioecological research, education, public outreach and accountability to stakeholders.
 - Ensuring appropriate exchange of information with relevant organisations in the ERA countries, as well as, EU institutions, particularly the European Commission services and other international organisations or societies (e.g., International Atomic Energy Agency, International Commission on Radiological Protection, International Union of Radioecologists).
 - Providing consolidated, collaborative responses to calls in Europe and the world.
 - Decide to jointly review progress made in ERA, and provide guidance through periodic senior management meetings.
 - Jointly declare that this initiative will be open to other organisations that have similar missions or interests in the field of radioecology and that are willing and capable to contribute to the goals of ERA.

Executed in 7 (seven) original counterparts, of which one (1) for each parties.

For : Institut de Radioprotection et de Sûreté Nucléaire, France

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Position : Director General

Date 02/06/09 Signature



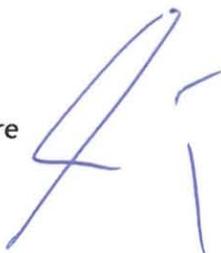
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Name : Wolfram König

Position : President

Date 18.06.09 Signature



For : Centro de Investigaciones Energeticas Medioambientales Y Technologicas, Spain

Name : Juan Antonio Rubio Rodriguez

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For : Sateilyturvakeskus - Radiation and Nuclear safety Authority, Finland

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For : Radiation Protection Authority, Norway

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For : Studiecentrum voor Kernenergie - Centre d'Etudes de l'Energie Nucléaire, Belgium

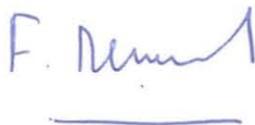
Name : Professor Frank Deconinck

Position: Chairman of the Board of Governors

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Name : Dr. Eric van Walle

Position: General Manager

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12/6/9

